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Book Reviews

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BOOK REVIEW . . .

The Capture and Care Manual—Capture, Care, Accommodation and Transportation of Wild African Animals, Andrew A. McKenzie, editor. Wildlife Decision Support Services and The South African Veterinary Foundation, Pretoria, South Africa. (Available from Wildlife Books, P.O. Box 251, St. Peter's Port, Guernsey, Channel Islands, England.) 729 pp.

The editor's preface makes it clear that this is a field manual for practical use in capturing, transporting and initial accommodation and care of South African animals. Mammals are emphasized, but chapters are devoted to the ostrich and crocodile as well.

The book is divided into two major sections. Section A provides general information on the drugs used, their pharmacology and an overview of chemical and physical restraint. Section B is devoted to individual species (elephant) or animal groups (antelope). Within Section B, the biology of the subject as it pertains to capture and restraint is discussed, followed by a list of precautions to protect the animal and operators. Next, a concise step-by-step "how to" protocol delineates drugs and dosages recommended for that species. Concluding statements are, "What not to do." For each species or animal group, chapters describe physical capture, chemical capture, transportation and care and accommodations following capture.

This is a unique book, skillfully blending the world literature as it pertains to South African species and the experiences of individuals who are carrying out field operations. The emphasis is on free-ranging animals, but some consideration is also given to the same species in captivity.

South African veterinarians and wildlife biologists have been pioneers and world leaders in the development of chemical restraint delivery systems and the utilization of drugs for immobilization. A particularly valuable contribution is the chapter on the use of long-acting tranquilizers in captive wild animals. The stress of capture, transport and submission to captivity may be extremely hazardous to the well-being of wild animals. The use of antipsychotic drugs from human medicine has been a tremendous adjunct to managing wild animals following capture. This chapter provides an insight into the use of these drugs, describing behavioral modification, how to use the drugs and specific instructions, based on experience with numerous antelope, elephants, zebra and rhinos.

A chapter is devoted to the principles of darting antelope, including the equipment, darting from a hide, a vehicle, and from a helicopter. This information has application in any setting throughout the world. The discussion of darting from a helicopter describes in detail, positioning, pilot communication, trajectory, and animal approach.

Construction details for facilities for drive-capture of wild animals are illustrated as are live traps for carnivores, primates and herbivores.

A capture may be initially successful, but ultimately fail because transport to a holding facility is less than optimal. Principles of crate usage, vehicles, tranquilizers and thermoregulation are described concisely. The diagrams in the book are excellent and augment the outlined narrative.

In the chapters on care and accommodation, topics include preparation, socialization, feeding, cleaning, parasite control and wound management. The special problems of individual species are described.

It may be assumed that the book is so oriented to South African conditions that application in other settings would be minimal. Not so, the principles, concepts and practical applications are valid for free-ranging animals elsewhere in the world and also in the captive situation.

Some of the products mentioned are either unavailable in other parts of the world or are known under different trade names. Fortunately Appendix B lists all generic names as well as trade names and manufacturers, many of which are international firms. The drugs and dosages used to sedate, tranquilize and immobilize free-ranging animals are summarized in Appendix A. References follow each chapter and include pertinent citations from the world literature. Particularly appealing to this reviewer is that the title of the paper is included in the reference. A glossary defines unfamiliar terms and bridges the gap between medicine and wildlife biology.

This book should be a must for any person contemplating handling free-ranging wild animals. Those managing captive wild animals also would profit from the vast experience of the 26 contributing authors.

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BOOK REVIEW . . .

Parasites, People, and Progress: Historical Recollections, A. Murray Fallis. Wall and Emerson, Inc., Six O'Connor Drive, Toronto, Canada M4K 2K1; Also, P.O. Box 428686, Middletown, Ohio, 45042-8686, USA. 1993. 150 pp., $16.50 Canadian.

For a long time people observed parasites, but considered them as curiosities. After it was shown that some of them caused disease, it became evident that they were of some importance. This book is an entertaining account of the beginning of the study of parasites and of the growth of the scientific discipline of parasitology in Canada. The story is told by Dr. Murray Fallis who is very knowledgeable about this subject and who contributed significantly in his own way to the development of parasitology in Canada.

The book contains a short preface and introduction, seven chapters, and an index. In Chapter 1 the author points out that the early recognition of the importance of parasitic diseases in Canada concerned malaria, usually considered by most as a tropical disease, but occurring in Ontario as far north as Perth in the mid 1850's. Canadian William G. MacCallum made an outstanding contribution to the knowledge of the life cycle of malaria and malaria-like organisms when he observed exflagellation of the male gametocyte in the blood stream and the subsequent entrance of the male gamete into a female gamete. His first observation of this phenomenon was with a species of *Haemoproteus*, a protozoan parasite of the red blood cells of crows (*Corvus brachyrhyncos*); later he observed the same situation in human malaria. Typhus was introduced into Canada in 1659 and this resulted in a series of epidemics which were augmented during the following decades by waves of immigrants infected with both lice and typhus. Typhus had smoldered in Ireland for many years. In 1845 and 1846 there was a failure of the potato crop. Great numbers of Irish came to Canada in overcrowded ships and a devastating epidemic occurred in 1847. Of the 890,000 immigrants in Quebec, over 30,000 became ill and were admitted to hospitals; more than 10,000 died. Despite the prevalence of the disease, not many scientific papers were written about it and it was many years later before a vaccine was developed.

In Chapter 2, the author emphasizes that the formal study of parasites in academic institutions in Canada was initiated by William Osler and R. A. Wright. Osler was especially influential due to his research and enthusiastic teaching; this greatly promoted the discipline. Because of Osler's findings in malaria and Wright's interest in helminths, further research in parasitology was encouraged.

Chapter 3 deals with pioneer parasitologists from 1900 to 1929. People with different backgrounds, such as naturalists, medical practitioners, veterinarians, and biologists, became interested in the worms that they saw in different animals, including people. Canada's first professor of parasitology was John L. Todd, a physician, who was appointed associate professor at the Faculty of Medicine at McGill University. Apparently his first interest in parasites was created when taking post-graduate work at the Liverpool School of Tropical Medicine. This interest was crystallized by trips to Africa. The first such trip was with Dutton who just previously had described *Trypanosoma gambiense*. Later William Osler was instrumental in having him appointed at McGill as Todd was gaining an international reputation as a parasitologist. Other pioneers in Canadian parasitology included E. M. Walker, also a medical graduate, who had a special interest in entomology. He became Professor of Invertebrate Zoology at the University of Toronto. Seymour Hadwen at the Ontario Research Foundation had an interesting and wide ranging career in veterinary entomology and parasitology and made numerous discoveries such as warble flies in reindeer and *Sarcocystis* in seals. In 1929 he became Director of Veterinary Science at the new Ontario Research Foundation. His various findings established the fact that insects had medical-veterinary importance. Edward Arthur Watson was a veterinarian who worked for the Canada Department of Agriculture. His final position was Chief Pathologist. His studies of dourine in horses clearly proved that the disease was caused by a trypanosome. He and his associates devised a complement-fixation test to identify the trypanosome agent causing the disease. This, together with an intense campaign, helped to eradicate the disease from Western Canada.

The author states in Chapters 4, 5, and 6 that in spite of the great depression in the 1930's, interest in parasites continued to grow during the following decades. Faculties were created or expanded and the numbers of scientists in government institutions increased. New research units were established such as The Harkness Fisheries Laboratory and the Wildlife Research Station in Olgonquin Park, Ontario, Southern Research Station at Maple, Ontario. The International Repository of Avian Blood Parasites at St. John's, Newfoundland, Federal

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Research Station at Lethbridge, Alberta, and Pacific Biological Station in Nanaimo, British Columbia.

The quality and quantity of the parasitological research has attracted many national and international societies to hold meetings in Canada. Among the groups were The American Society of Parasitologists, The Wildlife Disease Association, and the World Federation of Parasitologists. Canadians have had close ties with both the American Society of Parasitologists and the Wildlife Disease Association, and commonly publish in their journals and have held high offices in both societies.

Finally, in Chapter 7 the author discusses some present trends in the field of parasitology. Scientists in other disciplines are becoming conscious of the challenges and opportunities that parasites offer for research. Closer collaboration between disciplines is evident.

The index is detailed and very useful. It includes names of parasitologists, places, and parasites not already mentioned in this short review.

The major shortcoming of this book is the lack of a fuller account of the author's own important contributions to parasitology. Although of interest, the photographs are not of very good quality.

As parasitologists read this delightful history, perhaps some will recall the incident, course, teacher, or other association, which caused them to become interested in parasitology and to devote their lives to the study of the various parasitic organisms that affect wildlife, domestic animals, and man. The book is very readable; the stories of events, places and especially people make it so. This reviewer highly recommends it to those interested in the history of parasitology. The low list price makes it a bargain.

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